REMARKS

The present invention relates to a vinyl ether group-containing (meth) acrylic esther composition.

In the Office Action dated August 13, 2003, claims 1-17 were rejected. Preliminarily, it was noted that the Form 1449 or substitute thereof for the IDS filed April 12, 2002 was missing. Claims 1-17 were rejected under 35 U.S.C. § 112, second paragraph, including particularly with respect to the definition of R^2, which appears in several claims, the term "coexist" in claim 3, and the phrase "handling in the condition such that" (or the like) in claims 4-7. Finally, claims 1-17 were rejected under 35 U.S.C. § 103(a) based on U.S. Patent 2,692,256 (Bauer).

In order to advance the prosecution of the application, and determine a most appropriate manner for overcoming the rejections, an Interview was conducted with above-identified Examiner and the undersigned attorney on October 22, 2003. The following remarks constitute a statement of the substance of the Interview as understood by the undersigned attorney, further to the Examiners' comments as set forth in the Interview Summary (Form PTOL 413).

In response to the Office Action, first, please find attached hereto the substitute for the Form 1449 that was filed together for the IDS, namely, Form PTO/SB/08 A&B (modified) that was filed together with the other IDS papers on April 12, 2002, together with a copy of the filing receipt showing that such paper was filed on that date.

Further in response to the Office Action, and based on the discussions at the Interview, Applicants have variously amended the claims to improve the clarity thereof as such forth herein

above; additionally, new claims 18-21 have been added, directed to further preferred embodiments of the invention.

New claim 18 finds support on page 11, line 17 to page 12, line 15 of the specification. New claim 19 finds support on page 12, line 30 to page 13, line 23 of the specification. New claim 20 finds support on page 12, lines 16-29 of the specification. New claim 21 finds support on page 13, line 24 to page 14, line 1 of the specification. Therefore, no new matter issue is raised.

Rejection of claims 1-17 under 35 U.S.C. § 112

With respect to the rejection under 35 U.S.C. § 112, second paragraph, the issues were discussed extensively at the Interview, and in that regard, Applicants have substituted a more specific recitation for the phrase "organic residue" with respect to R^2, based on the disclosure in the specification at page 9, lines 11-17. Still further on this regard, the claims have been amended with respect to the substituent R^3, again further defining the organic residue substituent, more specifically, based on the disclosure at page 9, lines 21-25.

Regarding the term "coexist" in claim 3, this term expresses that the composition comprises the vinyl ether group-containing (meth) acrylic ester and the radical polymerization inhibitor, or comprises the vinyl ether group-containing (meth) acrylic ester, the radical polymerization inhibitor and the basic compound. In other words, the radical polymerization inhibitor and/or the basic compound in a solid or liquid state are dissolved or dispersed in the

vinyl ether group-containing (meth) acrylic ester in a liquid state. E.g. see p. 10, line 26 – page 11, line 16; page 14, lines 2-10; etc.; and the examples (Examples 13-24, 35, 37, etc.).

Regarding the phrase "handling in the condition such that" in claims 4 and 5, and similar recitations in claims 6 and 7, claims 4-7 have been amended, particularly in view of the discussion at the Interview, to more specifically indicate what is being handled, thereby improving the clarity of these claims.

In view of the foregoing, it is respectfully submitted that all bases for rejection under 35 U.S.C. § 112 have been overcome.

Rejection of claims 1-17 under 35 U.S.C. § 103(a)

Claims 1-17 were rejected under 35 U.S.C. § 103(a) as being upatentable over U.S. Patent No. 2,692,256 (Bauer).

The present invention resides in the composition which comprises the radical polymerization inhibitor and/or the basic compound as well as the vinyl ether group-containing (meth) acrylic ester in order to improve the stability of the vinyl ether group-containing (meth) acrylic ester, which has both radical polymerizability and cation polymerizability.

In contrast, in the production method of Bauer, polymerization inhibitor is not contained in the product, considering that it is removed by distillation, washing, and the like operations after the completion of the reaction. Moreover, the strong basic compounds such as sodium

methylate as catalysts are not contained in the product considering that such is removed or inactivated in the operations.

The Tables 1, 2 and 3 attached hereto indicate the operations in the Examples of Bauer, and clearly show the above points.

Furthermore, the Bauer reference discloses nothing specifically with respect to improving the stability of vinyl ether group-containing (meth) acrylic esters, including preventing the polymerization thereof during storage or handling, but without impairing the polymerizability of the vinyl ether group-containing (meth) acrylic esters, as described at page 4, line 34 to page 5, line 19 of the present specification, nor does Bauer focus on the importance of such aspect. Still further, the prior art in this field fails to teach or fairly suggest that the radical polymerization inhibitor can stabilize a cation polymerizable group of a vinyl ether, which is a significant feature in the present invention.

Regarding claim 4-7, 8-12, 13-15 and 17, Bauer fails to even remotely disclose or suggest the conditions cited in these claims, such as a water concentration in a liquid phase, molecular oxygen concentration in the gaseous phase, and the lightproof structure. Bauer also discloses nothing specifically with respect to the features described at page 6, line 15 to page 8, line 12 of the present specification, nor does Bauer focus on the importance of such aspect.

Accordingly, a contention that the present claims are unpatentable over Bauer would not be proper, and the rejections based on Bauer should be withdrawn.

New claims 18-21

Newly added claims 18 and 20 depend on claim 1 and claims 19 and 21 depend on claim 2, and the cited Bauer reference discloses nothing about such features as specified in newly added claims 18-21. Therefore, claims 18-21 are respectfully submitted to be patentable over the art of record.

In view of the foregoing remarks, Applicants request the Examiner's favorable reconsideration this application and allowance of all claims 1-21.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the local Washington D.C. telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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WASHINGTON OFFICE
23373
CUSTOMER NUMBER

Date: **November 13, 2003**

Table 1

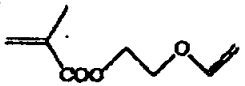
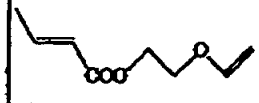
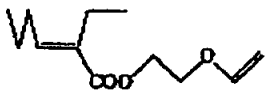
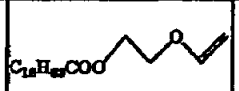
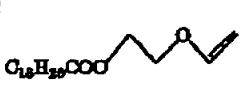
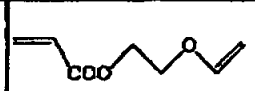
	Example 1		Example 2		Example 3		Example 4		Example 5		Example 6	
Starting ester	MMA	680	Et crotonate	228	Me 2-Et-2-hexenoate	78	Me oleate	148	Me linoleate	148	MA	585
Starting alcohol	Vinyloxy ethanol	150	Vinyloxy ethanol	88	Vinyloxyethoxy ethanol	66	Vinyloxy ethanol	132	Vinyloxy ethanol	132	Vinyloxy ethanol	150
Enzyme (Base)	MeONa /MeOH	10+10	EtONa /MeOH	25+1.5	Na	0.3	MeONa /MeOH	12	MeONa /MeOH	10	MeONa /MeOH	5+20
Polymerization inhibitor	β-Naphthol	Small	β-Naphthol	Small	—		—		—		β-Naphthol	3.7
Polymerization inhibitor	Copper	Small	—		—		—		—		Copper	0.4
Product												
Purification mehod	Distillation→ Re-distillation		Bz-water wash→ Dry→Distillation		Bz-acetic acid-water wash→Dry→Bzcut		Bz-$NaHCO_3$ aq. wash→Dry→Bzcut		Distillation		Distillation	
Enzyme (Base)	MeONa	Removed	EtONa	Removed	Na	Removed	MeONa	Removed	MeONa	Removed	MeONa	Removed
Polymerization inhibitor	β-Naphthol	Removed	β-Naphthol	Removed	—		—		—		β-Naphthol	Removed
Polymerization inhibitor	Copper	Removed	—		—		—		—		Copper	Removed
Note											Not appropriate for acrylate	

Table 2

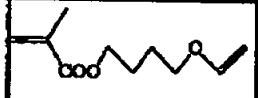
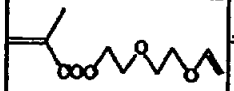
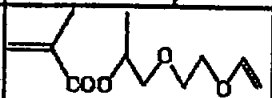
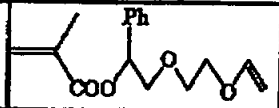
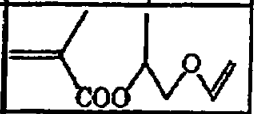
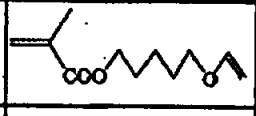
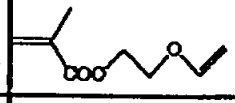
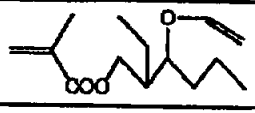
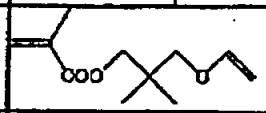
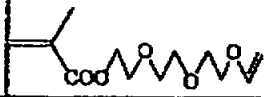
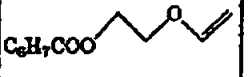
	Example 7		Example 8		Example 9		Example 10		Example 11		Example 12	
Starting ester	MMA	200	MMA	230	MMA	150	MMA	150	MMA	150	MMA	100
Starting alcohol	Vinyloxy butanol	35	Vinyloxy ethoxy ethanol	78	Vinyloxyethoxy methylethanol	78	Vinyloxyethoxy vinylethanol	54	Vinyloxyethoxy phenylethanol	52	Vinyloxy mehtyl ethanol	24.5
Enzyme (Base)	Na/MeOH	0.5/15	Na/MeOH	0.75	MeONa /MeOH	0.5Na	MeONa /MeOH	0.5Na	MeONa /MeOH	0.5Na	MeONa /MeOH	0.5Na
Polymerization inhibitor	β-Naphthol	Small	—		β-Naphthol	Small	β-Naphthol	Small	β-Naphthol	Small	β-Naphthol	Small
Polymerization inhibitor	—		—		—		—		—		—	
Product												
Purification mehod	K_2CO_3 aq. wash→Dry → Distillation		Water wash→Dry→ Distillation (Polymerization)→ Re-distillation(HQ added)		Water wash→Dry→ Distillation		Distillation		Distillation		Water wash→Dry→ Distillation→Re-distillation	
Enzyme (Base)	MeONa	Removed	Na	Removed	MeONa	Removed	MeONa	Removed	MeONa	Removed	MeONa	Removed
Polymerization inhibitor	β-Naphthol	Removed	HQ	Removed	β-Naphthol	Removed	β-Naphthol	Removed	β-Naphthol	Removed	β-Naphthol	Removed
Polymerization inhibitor	—		—		—		—		—		—	
Note												

Table 3

	Example 13		Example 14		Example 15		Example 16		Example 17		Example 18	
Starting ester	MMA	107.6	BuMA	320	MMA	300	MMA	400	MMA	150	Me sorbate	75
Starting alcohol	Vinyloxy pentylalcohol	35	Vinyloxy ethanol	150	Vinyloxy ethylhexanol	121	Vinyloxy dimethyl propanol	130	Vinyloxy ethoxy ethoxyethanol	6	Vinyloxy ethanol	30
Enzyme (Base)	Na/MeOH	0.3/5	MeONa /MeOH	10+10	Na/MeOH	1.5	MeONa /MeOH	1.5	MeONa /MeOH	0.5	Na	0.4
Polymerization inhibitor	β-Naphthol	0.7	β-Naphthol	3	β-Naphthol	Small	β-Naphthol	Small	β-Naphthol	Small	—	
Polymerization inhibitor	Copper	0.07	Copper	5	—		—		—		—	
Product												
Purification mehod	Distillation→ Re-distillation (β-naphthol added)		Distillation		Water wash→Dry→ Distillation→Re-distillation		Water wash→Dry→ Distillation		Water wash→Dry→ Distillation→Re-distillation		Distillation→ Re-distillation	
Enzyme (Base)	Na	Removed	MeONa	Removed	Na	Removed	MeONa	Removed	MeONa	Removed	Na	Removed
Polymerization inhibitor	β-Naphthol	Removed	β-Naphthol	Removed	β-Naphthol	Removed	β-Naphthol	Removed	β-Naphthol	Removed	—	
Polymerization inhibitor	Copper	Removed	Copper	Removed	—		—		—		—	
Note									Partially polymerized			